

## CLAIMS:

1. A method for determining coat colour genotype in a pig which comprises:
  - (a) obtaining a sample of pig nucleic acid; and
  - (b) analysing the nucleic acid obtained in (a) to determine whether a mutation is/is not present at one or more exon/intron splice sites of the *KIT* gene.
2. A method as claimed in claim 1 wherein the analysis in step (b) is carried out to determine whether a mutation ~~is/is~~ not present at the exon 17/intron 17 boundary.
3. A method <sup>as</sup> ~~is~~ claimed in claim 2 wherein the mutation consists of the substitution of the G of the conserved GT pair for A.
4. A method as claimed in claim 1 wherein the sample of nucleic acid is amplified prior to analysis.
5. A method as claimed in claim 4 wherein the nucleic acid <sup>is</sup> ~~is~~ genomic DNA.
6. A method as claimed in claim 5 wherein amplification is carried out using PCR and at least one pair of suitable primers.
7. A method as claimed in claim 6 wherein the pair of suitable primers is:
 

5' -GTA TTC ACA GAG ACT TGG CGG C-3'); and

5' -AAA CCT GCA AGG AAA ATC CTT CAC GG-3'.
8. A method as claimed in claim 5 wherein after amplification the nucleic acid is treated with a restriction enzyme, followed by analysis of fragment lengths.
9. A method as claimed in claim 8 wherein the nucleic acid is treated with the restriction enzyme *NlaIII*.
10. A method as claimed in claim 8 or claim 9 wherein the ratio of restriction fragment lengths is determined.

- Sub C6
11. A method as claimed in claim 4 wherein the nucleic acid is mRNA.
12. A method as claimed in claim 11 wherein the nucleic acid is amplified using RT-PCR.
13. A method as claimed in claim 12 wherein the length of RT-PCR product is determined.
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- Sub B2
14. A method for determining coat colour genotype in a pig which comprises the step of analysing a sample of pig KIT protein to determine whether the protein is the splice variant protein.
15. A kit for use in determining the coat colour genotype of a pig which comprises one or more reagents suitable for determining whether a mutation is present at one or more exon/intron splice sites of the *KIT* gene.
- Sub C6
16. A kit as claimed in claim 15 which comprises one or more reagents for carrying out PCR and one or more pairs of suitable primers.
17. A kit as claimed in claim 16 which comprises the following pair of primers:  
5' -GTA TTC ACA GAG ACT TGG CGG C-3'); and  
5' -AAA CCT GCA AGG AAA ATC CTT CAC GG-3'.